

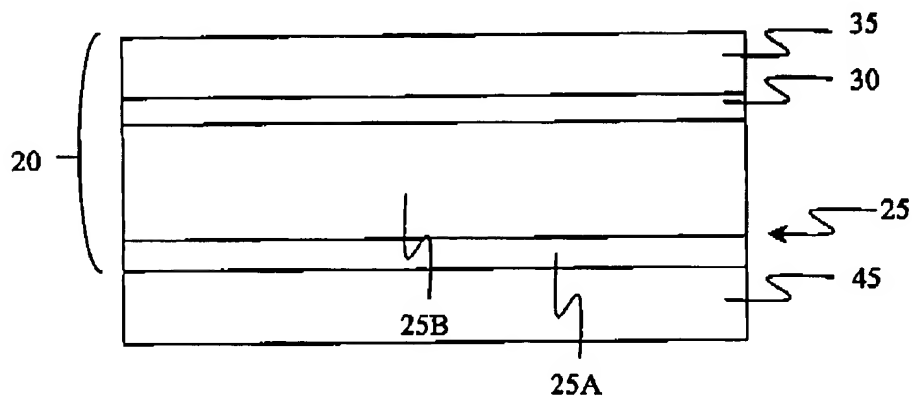
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Art Unit - 1775

### REMARKS

Claims 3-26 and 46-47 are pending in the present application. By the present amendment, claims 3-5, 7-9, 11-16, and 19 have been amended, claims 1-2 and 27-45 have been canceled, and claims 46 and 47 have been added. Of the pending claims, 5, 9, 19 and 46 are independent.

#### Independent Claims 5 and 19

Turning initially to claim 5, the first independent claim, applicants note that the recitations of this claim are not taught or suggested by any of the cited references. Specifically, according to claim 5, the multilayer wear resistant coating 20 comprises a relatively hard underlayer 25 and a chemically inert yttrium oxide overlayer 35. The underlayer 25 comprises a pair of layers - a metal layer 25A and a metal nitride, metal carbide, or metal carbo-nitride layer 25B.



In contrast, by the Examiner's own admission, the art cited in the Office Action of November 18, 2003 against claim 5 in its original form does not include any teachings related to the specifics of the underlayer 25. According to the Office Action,

"In the coating art, the claimed multilayered under layers and an additional layer is well known in the art to improve the performance of coatings in the tool art."

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There are two fundamental problems with the above assertion. First, applicants note that the manner in which the Office Action introduces and uses teachings that are allegedly "well known" in the art is improper. Further, even if applicant were to concede that the asserted teachings are "well known" in the art, the grounds of rejection still fail to address all of the limitations of the claims at issue.

Specifically, regarding the assertion in the Office Action that "the claimed multilayered under layers and an additional layer" are "well known" in the art, applicants refer to MPEP section 2144.03. This section of the MPEP provides clear guidance to assist examiners in determining when it is appropriate to rely on common knowledge in the art in making a rejection and, if such official notice is taken, what evidence is necessary to support the examiner's conclusion of common knowledge in the art. According to the MPEP, it "is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based." In the present context, original claims 5, 6, 13 and 16-18 have been rejected on the primary ground that "the claimed multilayered under layers and an additional layer is well known in the art." Accordingly, applicants respectfully submit that the assertion that these technical features are commonly known in the art is improper and should not be raised against the presently pending claims in a similar manner.

Even if applicants were to concede that a multilayered under layer and an additional layer were well known in the art at the time of the present invention, such an admission would fall far short of the recitations of claim 5, which claim recites an yttrium oxide overlayer and a dual layer underlayer comprising a metal layer and a metal nitride, metal carbide, or metal carbo-nitride layer. Even if the art teaches that it is known to provide underlayers in certain contexts, there is no suggestion in the art to provide the claimed underlayers beneath an yttrium oxide overlayer of a coated machine tool.

Independent claim 19 is similar in scope to claim 5, with the exception that the claim recites a "metal oxide" overlayer, as opposed to an "yttrium oxide" overlayer. Further, claim 19 expressly recites that the metal layer is formed over the base material and that the metal nitride, metal carbide, or metal carbo-nitride layer is formed over the

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metal layer. Accordingly, with these exceptions noted, applicants submit that the arguments presented above with respect to claim 5 are also applicable to claim 19.

#### Independent Claim 9

Although independent claim 9 is similar to claim 5 in that it also recites an yttrium oxide overlayer, the claim differs from claim 5 in that it recites an underlayer comprising titanium and yttrium. In its dependent form, claim 9 had also been rejected primarily in view of Sarin et al. (the same reference applied to claim 5). An additional two references were also relied upon to support the assertion that it would have been obvious to provide an underlayer of titanium and yttrium. However, applicants note that the cited references merely teach compositions for various alloy coatings, as opposed to underlayers for an yttrium oxide overlayer. None of the references include any suggestion that the coating compositions may be used as an underlayer, let alone an underlayer of an yttrium oxide overlayer. Accordingly, applicants submit that the rejection of claim 9, in its previous dependent form, was not proper and would not be proper in its present independent form.

#### Independent Claim 46 and Dependent Claim 18

Independent claim 46 also recites a coated machine tool but differs from the above-noted independent claims in that it recite an overlayer comprising an oxide of a first metal and an interlayer where:

“relative proportions of said first and second components of said interlayer are graded across said interlayer such that a quantity of said first metal in said interlayer increases from a side of said interlayer adjacent to said underlayer to a side of said interlayer adjacent to said overlayer.”

Accordingly, the claim relates to a multi-layer structure where an interlayer is provided with a metal component that matches the metal oxide of the overlayer and where the relative proportion of the specific metal component in the interlayer increases as it

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approaches the metal oxide overlayer. Support for this claim may be found in the second full paragraph of page 5 of the present application.

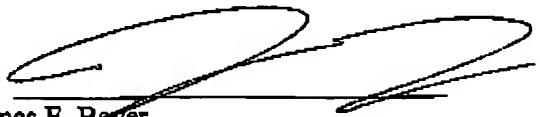
Dependent claim 47 is further illustrative of an example of a type of coating covered by claim 46. Specifically, claim 47 recites a multi-layer structure where the metal oxide overlayer comprises an yttrium oxide overlayer and where the quantity of yttrium in the interlayer increases from the underlayer to the overlayer. Claims 46 and 47 are similar in scope to original dependent claim 18, which was rejected on the improper "common knowledge" grounds traversed above. Applicants respectfully assert that none of the art of record comes even remotely close to teaching the graded interlayer of claims 18, 46 and 47.

#### CONCLUSION

Applicants respectfully submit that the present application is in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

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